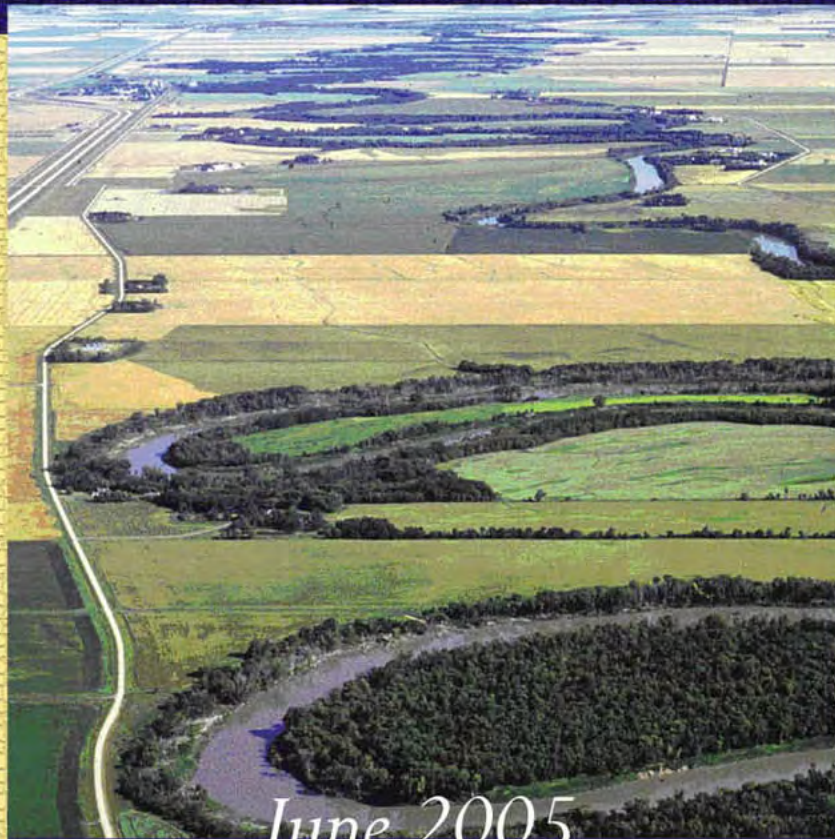


A DISCUSSION PAPER ON

THE INTERNATIONAL WATERSHEDS INITIATIVE



June 2005

SECOND REPORT TO THE GOVERNMENTS
OF CANADA AND THE UNITED STATES

UNDER THE REFERENCE OF NOVEMBER 19, 1998

WITH RESPECT TO INTERNATIONAL WATERSHED BOARDS

INTERNATIONAL
JOINT
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Canada and United States



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Front cover photograph: Meander belt of the Red River, looking north (downstream), near St. Jean Baptiste, Manitoba, by G. R. Brooks, Natural Resources Canada

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1 Core Idea

Transboundary watershed problems are best resolved by those who live and work in the watershed. Further, success in resolving local problems will increase as certain conditions evolve: local participants gain experience in working together on problems and opportunities; a systemic, ecosystem framework is used in learning about problems and solutions; and trust among local participants is nurtured through shared work and discussions of shared values.

The International Joint Commission's International Watersheds Initiative proposal is based on the premise that local people, given appropriate assistance, are those best positioned to resolve local transboundary issues. We also believe that effective trust-building and problem-solving capabilities at the local watershed level will substantially prevent, reduce and perhaps eliminate the need to directly involve the two national governments, or the IJC in a full formal reference, to resolve specific international watershed issues.

As we look to the future, creating such local solution-building capabilities will represent a significant investment in the management of our shared and precious water resources. We at the IJC look forward to discussing these ideas and to moving forward on this initiative with the two federal governments.

2 Overview

For more than a century the use and allocation of shared waters along the Canada–United States international boundary have largely been characterized by goodwill and collaboration. In some instances, however, disputes have arisen. Despite various agreements concerning the protection, use and allocation of these shared resources, increasing demands for their use will continue to generate periodic, and perhaps an increasing number, of cross-border disputes. As the International Joint Commission (IJC) noted in its 1997 report, *The IJC and the 21st Century*, several forces of change may place the two countries in difficult transboundary environmental situations.

In its 1997 report the IJC made a number of proposals to assist the governments with these challenges. One of these was the creation of ecosystem-based international watershed boards in transboundary river watersheds. In 1998, the governments asked the IJC to further explore this concept. Our first progress report on this initiative was issued in 2000. This, our second progress report, is given to the governments with the intent of cooperatively moving it from idea to implementation.

Working as partners at the watershed level, federal, provincial, state and local organizations can build local capabilities to resolve potential transboundary problems. International disputes may thus be avoided.

This report focuses on strengthening the capabilities of the Commission’s existing boards to anticipate and respond to watershed issues. Building the boards’ transboundary watershed capabilities includes:

- employing a broader, systemic perspective of the watershed;
- expanding outreach and cooperation among organizations with local water-related interests and responsibilities;
- promoting the development of a common vision for the watershed;
- developing a better hydrologic understanding of the water-related resources; and
- creating the conditions for the resolution of specific watershed-related issues.

The IJC’s fundamental interest in promoting the International Watersheds Initiative concept is to meet more effectively its unique mandate of preventing and resolving transboundary water disputes. An integral part of this work is building closer partnerships with existing basin authorities or organizations, thus promoting better use of all watershed-focused funds and staff resources.

The international watershed boards concept described in *The IJC and the 21st Century* report has evolved from the original 1997 vision to the current, more flexible

concept of promoting the collective growth of watershed capabilities. This conceptual development has resulted in a shift in focus by the IJC from the creation of international watershed boards to a broader International Watersheds Initiative. The aim of the Initiative is to enhance the capabilities of existing IJC international boards while, at the same time, strengthening cooperation among the various local entities in transboundary watersheds.

The most promising watersheds for initial development of this Initiative are:

- the St. Croix River watershed (Maine and New Brunswick),
- the Red River watershed (Minnesota, Manitoba, North Dakota and South Dakota) and
- the Rainy River watershed including the Rainy and Namakan lakes (Ontario and Minnesota).

Effective IJC boards operate in these three watersheds along with a wide variety of other local organizations with watershed interests. These three watersheds face a range of intermediate- to long-term challenges, including issues (as discussed in Section 4) that may emerge as cross-border disputes which, if not resolved locally at an early stage, may involve the two federal governments.

IJC boards in these three watersheds have prepared unique work plans to help build watershed capabilities, with specific focus on the distinctive transboundary aspects of their respective mandates. These work plans will also benefit a range of other watershed interests since building a board's watershed capability builds partnerships. Moving forward on these plans requires both ongoing and special project funding.

3 The International Watersheds Initiative

Canada and the United States share a common boundary from the Atlantic to the Pacific and, in the north, along the Alaskan peninsula to the Arctic Ocean, a total length of 8,850 km (5,499 miles). Over this distance, the boundary passes along or intersects many economically and environmentally significant rivers and lakes.

By the beginning of the 20th century, a number of complex water problems were developing along this boundary. In response, the Boundary Waters Treaty of 1909 between the United States and Great Britain set out rules and principles to govern the use and development of boundary water resources, and established the IJC as a binational institution to prevent and resolve disputes.

The IJC and its boards generally have been very successful in addressing water level and flow issues along the length of the shared border. The IJC has dealt with approximately 120 references¹ and applications² which the two governments would have had to address directly, or through other means, had the IJC not been established. The IJC and its boards have also encouraged industry, municipalities and state/provincial authorities to address water quality and other environmental issues related to transboundary watersheds.

In its 1997 report, *The IJC and the 21st Century*, the IJC recommended the establishment of permanent IJC international watershed boards in a number of U.S.–Canada transboundary watersheds. These boards would monitor, study, and report to the IJC on a full range of transboundary environmental and water-related issues and, additionally, improve dialogue and information sharing to resolve issues.

The two federal governments expressed interest in the IJC's watershed board proposal and issued a reference in November 1998 requesting further development of the concept. This included the general operating framework for international watershed boards, a recommended location for the first board, cost projections, and an indication of possible funding sources.

In 2000, the IJC issued its first progress report under the 1998 reference. The report described IJC activities that had taken place under the reference and noted some of the issues encountered in consultations with federal, state and provincial officials. In particular, there was some misunderstanding whether the IJC was recommending new boards or enhanced mandates for existing IJC boards and, further,

¹ References are formal requests from the governments to the IJC to examine and provide advice on an issue.

² Applications are requests for approval to build structures affecting certain transboundary water levels or flows.

whether any type of IJC board would assume some responsibilities of other existing agencies.

In 2002, the IJC began working with its boards and their watershed partners to clarify these issues. The discussions were productive, and the IJC concluded that incremental advancement towards the full watershed concept, beginning with enhancing the capabilities of several existing boards, would be the most practical strategy for building effective and respectful arrangements. IJC boards would continue their current responsibilities and, in full cooperation with other entities, build partnerships to improve local capability in monitoring and addressing transboundary water and related environmental concerns.

The IJC's structure as a binational commission³ and its operating principles of equality of membership, independent and objective advice giving to governments, joint fact-finding, science-based decision making, and local engagement make it uniquely suited to promote the transboundary aspects of the watersheds initiative. Additionally, the IJC seeks partnerships to promote balance among different agencies and organizations with an interest in the watershed, and seeks consensus in developing advice for the resolution of transboundary issues.

The International Watersheds Initiative will enhance the work of governments and other organizations and will respect existing responsibilities for water and natural resources management. At this time, the Initiative proposes to develop the capabilities of existing IJC boards in three transboundary watersheds: the St. Croix River, the Red River and Rainy River including the Rainy and Namakan lakes area. The following section outlines IJC's intentions for these watersheds and describes specific projects which the three boards are eager to undertake to further implement the watersheds concept.

4 Implementing the watershed approach

Overview

Water quality and quantity issues have been central to ongoing IJC board activities in the **St. Croix River, Red River and Rainy River watersheds**. Measurably significant water quality improvements have occurred in all three rivers since the early 1960s, in part through the work of the IJC and its boards.

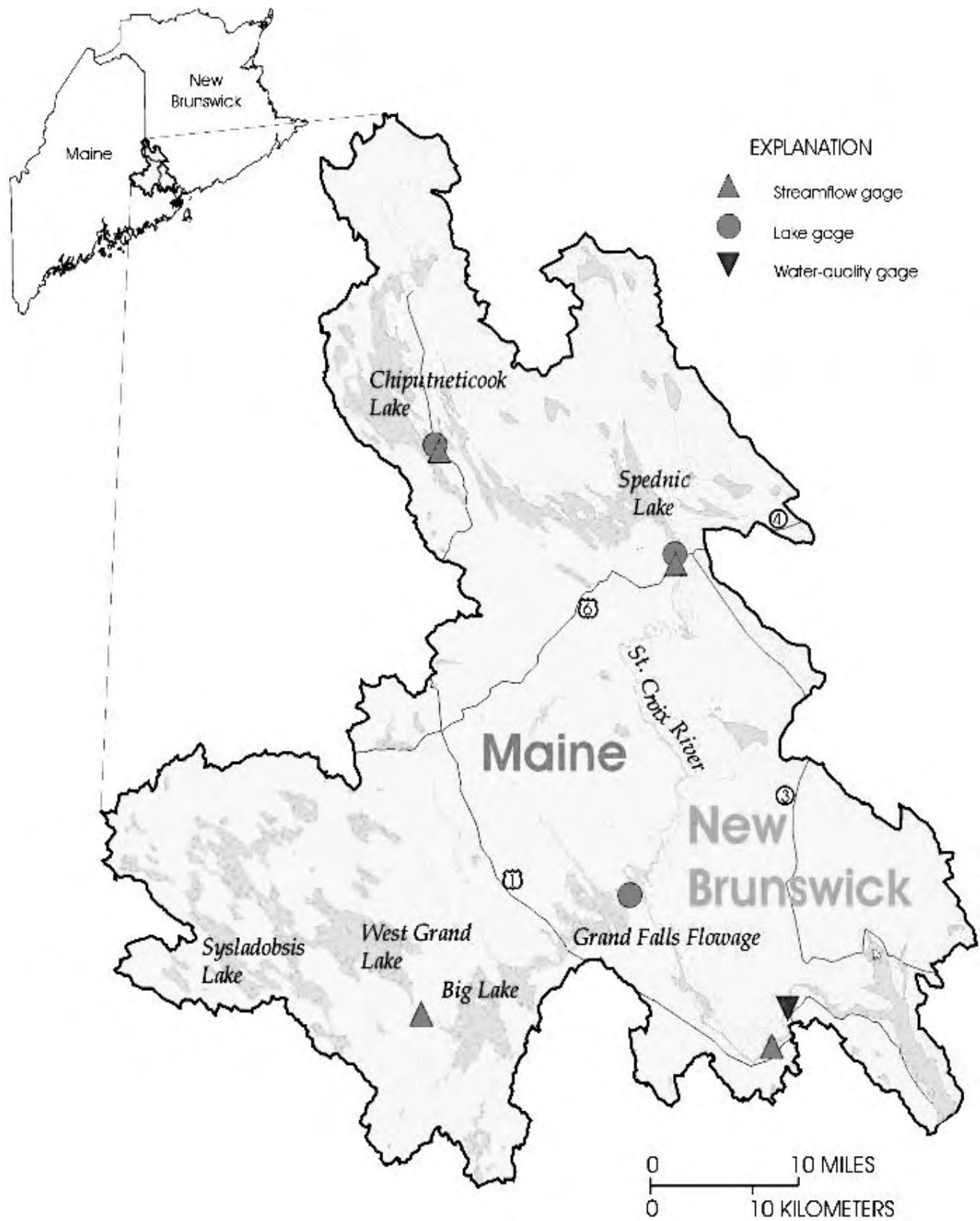
Maintaining and improving the ecological health of these rivers will require sustained effort and ecosystem thinking. Beyond the traditional water quality and water quantity issues, other stresses affect these shared waters. The recent high-water and low-water events in the Rainy River watershed and the drought in the St. Croix River watershed appear to be consistent with climate projections calling for more variable climate and greater extremes of climate. As various land-use developments in these watersheds accelerate, water-use demands and problems such as invasive species, increased nutrient loadings and accidental spills will likely increase conflicts. The challenge of balancing competing watershed-use interests will become more difficult. The IJC believes that its International Watersheds Initiative can help local organizations and citizens address such emerging situations so that the federal governments will not need to get involved.

The IJC's St. Croix River, Red River and Rainy River boards want to address these challenges at the local level and are prepared to strengthen their capabilities to effectively deal with watershed issues. The following text outlines some of the existing and potential issues in each of these watersheds, describes the mandate of each IJC board, and proposes different sets of activities to build board capabilities.

The St. Croix River watershed



The St. Croix River watershed



Source: U.S. Dept. of the Interior, U.S. Geological Survey

Challenges and opportunities

The St. Croix River watershed is sparsely populated. Its economy relies on forestry and pulp and paper industries, tourism and, increasingly, recreation. Some recreational and habitat uses compete at times with long-standing industrial uses and hydropower generation. Growing water-use interests include canoeing, water access to riparian properties, and fishing. The most significant long-standing dispute in the watershed concerns the competing interests of small mouth bass fishing and the reintroduction of a native species, the alewife.

There are numerous organizations in the St. Croix River watershed with a wide range of intersecting and sometimes competing water resource interests. Many users are unaware of how their own interests relate to those of others. With the growth of the region's recreational sector, complaints from competing uses are likely to increase. Competing water-use interests can grow into major transboundary issues unless resolved locally by those with the will and capacity to do so.

The International St. Croix River Board (ISCRB)

The ISCRB monitors compliance with IJC Orders of Approval and monitors the water quality of the St. Croix River. Upon the IJC's request and provision of funding, the Board broadened its activities by undertaking and supporting projects of value to both U.S. and Canadian interests. These projects include:

- an operations and performance survey of sewage treatment plant protocols along the St. Croix River international boundary;
- an examination of trends in environmental degradation in the St. Croix estuary; and
- fisheries studies and research to help resolve the dispute between Maine and New Brunswick over alewife access to spawning habitat in the international waterway.

The Board is committed to strengthening its capability to meet its mandate through a more deliberate watershed-based approach.

In 2002, the ISCRB convened a science workshop on the state of the St. Croix ecosystem to increase understanding of current trends and to determine information gaps and priorities for future studies. The workshop bolstered existing relationships and established new links with other watershed stakeholders.

In November, 2003 the Board hosted a meeting with key stakeholders to begin consideration of a watershed approach. A follow-up meeting in March 2004 discussed possibilities for closer coordination and collaboration on the transboundary aspects of the watershed. That meeting included IJC commissioners and senior officials from Maine and New Brunswick.

In October 2004, ISCRB and an IJC commissioner met with a broader range of senior-level government officials who serve on various international groups at the Gulf of Maine Summit to explore further application of the International Watersheds Initiative to the St. Croix River area, to exchange information on their respective interests and roles in the watershed, and to explore mutually beneficial opportunities for closer cooperation and consultation. Participants expressed support for IJC's watershed initiative.

Programs to build watershed capacity

These discussions led the Board to establish an explicit strategy for building its watershed capability. Key elements include

- strengthening the Board's outreach and coordination/cooperation activities,
- promoting the development of a common vision for the watershed, and
- developing a better understanding of the watershed.

Pending funding, these activities now are in the Board's 2004–2007 work plan.

- **Outreach**

Watershed directory

One of Board's first steps was to develop a comprehensive directory of organizations and entities with interests in the watershed. The directory had been requested by local stakeholders as a first step in fostering communication among all interests in the watershed. Under a contract coordinated by the Board, the St. Croix International Waterway Commission developed a directory of stakeholders including federal, state and provincial, community, non-profit and other local interests. The directory will help to improve information exchange and cooperation within the watershed.

Expanding Board engagement

Through increased cooperative outreach activities with other watershed stakeholders, the Board will improve its understanding of significant watershed issues and projects and thereby improve its ability to play a meaningful role in the watershed and provide value-added advice to the IJC. Specific outreach activities will include broadening the focus of the Board's public meetings, participating as observers in other stakeholder meetings and upgrading the Board's website.

- **Promoting a common vision for the watershed**

Transboundary digital watershed mapping

The Board and the IJC propose to build an integrated digital map set for the St. Croix River watershed. Currently, mapping is developed separately by U.S. and Canadian organizations thus presenting an artificial physical fragmentation

of the watershed. Mapping of the U.S. and Canadian sides of the watershed would be merged into a single map set. The set will start with an integrated base map with overlays to display key features relevant to watershed imaging and water-resource monitoring and management.

This project will be developed over time as resources become available. The integrated digital map project will provide the basic framework for sustainability planning and monitoring of the watershed. Also, by providing a common basis for understanding the watershed, the map will help bring St. Croix River watershed stakeholders together in work towards a common vision for the watershed. There is strong and broad interest in this project, as evinced by the fourteen federal, state/provincial, academic and other non-governmental organizations which have contributed substantial staff time to developing its detailed scope of work. Other watersheds are also interested in this project.

“State of the watershed” report

The Board wishes to complete a comprehensive “state of the watershed” report which would identify the challenges and opportunities within the watershed. This report would be developed in cooperation with Maine and New Brunswick to assure that it will be comprehensive, constructive, balanced, and credible.

- **Building a better understanding of the watershed**

Coupled atmosphere–hydrology model

The Board proposes to develop a hydrological model to better understand and predict the consequences of various meteorological conditions and operational scenarios for dams on different parts of the St. Croix River system. The model would improve science-based decision making in the watershed. The 1999–2002 and the 2004 droughts highlighted the need for this type of a model. The two droughts generated public complaints about low water in certain parts of the system and raised questions about the trade-off between reservoir drawdown and meeting minimum flow requirements. Good management of a watershed needs answers to such questions.

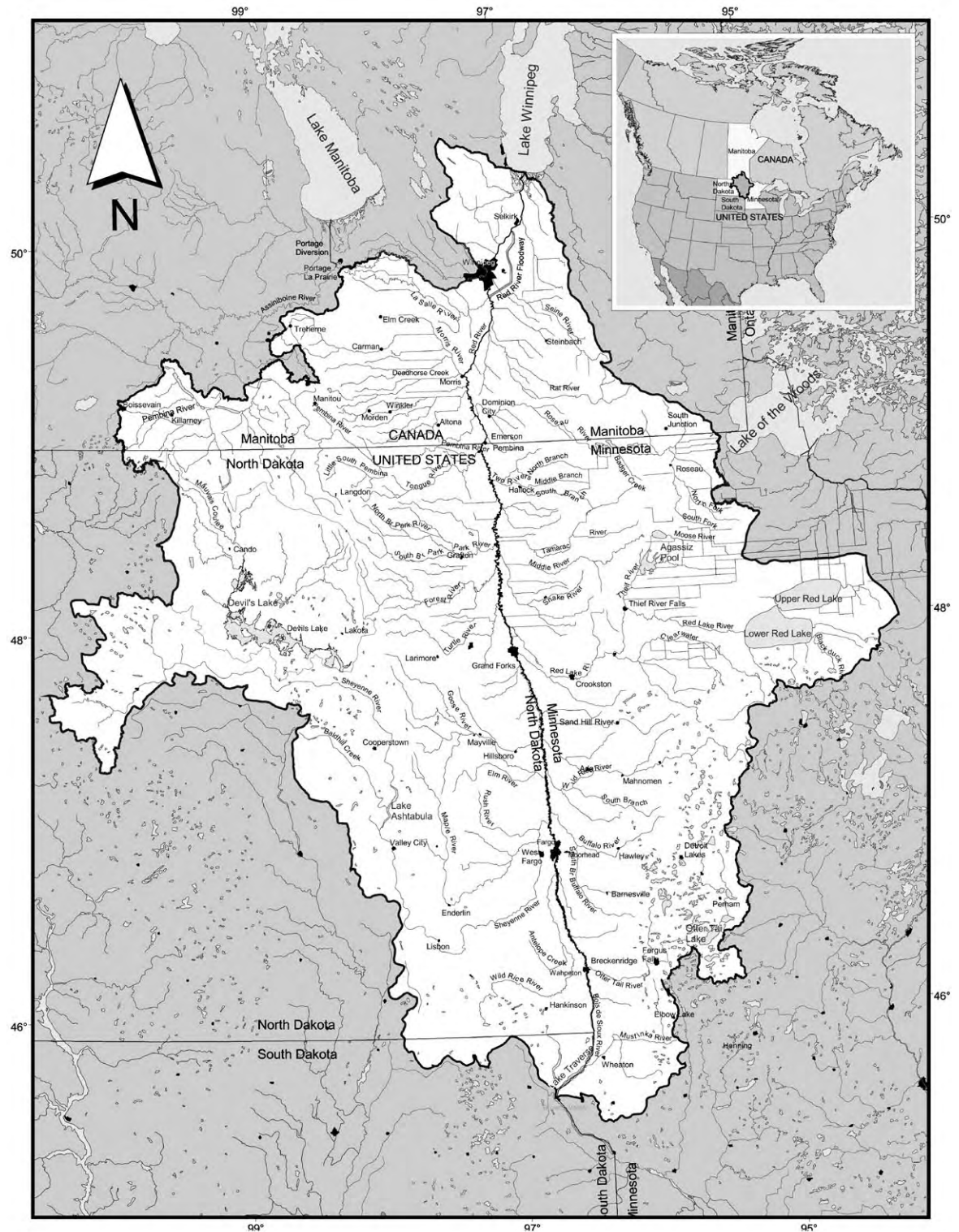
Assessing air quality

In keeping with the ecosystem approach which is basic to the International Watersheds Initiative, the Board is interested in the condition of the air quality in the Basin, a transboundary issue of growing concern. The Board recognizes that there are existing federal and provincial/state agencies in both countries, that provide oversight of this resource. The Board would like to work with these groups to obtain air quality information and provide a review of this information as a component of the “proposed State of the Watershed Report”.

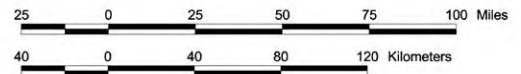
The Red River watershed



The Red River watershed



Source:
 Ryan Schindelka, Environment Canada



Challenges and opportunities

The Red River watershed includes portions of North Dakota, Minnesota, Manitoba, and a small part of South Dakota. Its population of 1.3 million is concentrated in the urban centers of Fargo/Moorhead, Grand Forks/East Grand Forks and Winnipeg, all of which are highly vulnerable to flooding due to the flat topography of the basin. Population growth will increase demand for water and elevate issues such as appropriate land use, waste disposal, and municipal and industrial pollution control.

Agriculture is the basin's economic bedrock, hence water resource management — particularly in regard to quantity, quality, and flood mitigation/control — is absolutely central to the basin's sustainability. These water management issues are transboundary issues since the U.S.–Canadian border transects the basin's physical, economic and social structures. Some of these issues, such as Devils Lake and the lower Pembina River flooding, have created significant cross-border political problems. Others, such as flood protection works and flood mitigation policy, would benefit from transboundary collaboration. Concern also is growing about the impact of intensive livestock operations and nutrient loads on water quality in Lake Winnipeg, as well as the potential impact of alien invasive species on fish populations.

Watershed stakeholders widely recognize the importance of coordinating their actions. The 1997 Red River flood underscored the need for a binational approach to transboundary water management, yet existing arrangements are focused on specific state or provincial needs and do not benefit from a broader, watershed-based approach. Jurisdiction for water resource management is shared among the agencies of the two federal governments, North Dakota, Minnesota and Manitoba, and a substantial number of cities, towns, rural municipalities, counties and First Nations/Native Americans.

Among the many water-related organizations in the basin, the Red River Basin Commission (RRBC) has emerged as a watershed-based, grassroots organization with a broad set of interests and support from state/provincial governments. The RRBC is attempting to promote a watershed-wide vision through the development and implementation of a comprehensive Natural Resources Framework Plan (NRFP). In addition, the International Water Institute (IWI)⁴ serves as a collaborative centre for research and watershed education which transcends jurisdictional boundaries.

⁴ IWI is the recently-formed successor organization to the Red River Basin Institute.

The International Red River Board (IRRB)

This IJC board monitors water quality at the international boundary, provides a forum for the identification, discussion and resolution of transboundary water-related issues, recommends strategies concerning water quality, water quantity and aquatic ecosystem health objectives from a transboundary perspective, and monitors flood preparedness and mitigation activities in the Red River watershed. In addition, the Board communicates with agencies and organizations in the watershed and seeks partnerships to improve a shared understanding of water issues and to develop the knowledge base for better transboundary decision making. The Board has a half-time secretariat position which coordinates Board activities, conducts outreach, and builds and maintains relations with other key water-focused organizations in the watershed. The IRRB works closely with the RRBC and the IWI, as well as with other organizations in the watershed.

Programs to build watershed capabilities

The Board's proposed work program evolved from consultations with a wide range of interests and organizations in the watershed and from the Board's own assessment of its mandate and strengths, within the framework of known and potential challenges. The elements of the Board's program are:

- strengthening outreach and coordination with other watershed organizations, and
- improving the information base to address specific transboundary issues.

• **Outreach and coordination**

Strengthening outreach

To strengthen its capacity to provide sound and timely advice on transboundary water issues, the IRRB recognizes the need to broaden its outreach activities and to build and maintain relations with key water-focused organizations in the watershed. This includes ongoing communication and participation in meetings and forums organized by other groups and engagement of First Nations/Native Americans in the activities of the Board, all with a view to contributing to better understanding of water-related resources on a watershed-wide basis.

The Board's Secretariat has been the IRRB's organizational anchor, effectively keeping the IRRB focused and on track. It prepares annual reports and manages the Board's outreach efforts. Currently funded on a year-to-year basis by the IJC and Environment Canada, a firm, ongoing commitment of resources is required so that the secretariat can engage in multi-year planning and provide seed-funding for important projects that will benefit all interests in the watershed.

- **Improving the information base to address transboundary issues**

Notification of intensive livestock operations

In 2002, the Board implemented a "Notification Protocol for Intensive Livestock Operations Proposing to Locate near the International Boundary." This has improved cross-border information and data sharing on such proposals and specifically provides the framework for early cross-border notification and discussion of proposed large-scale livestock operations and their potential transboundary impacts.

Lower Pembina River flooding

In 2004, the International Pembina River Basin Advisory Board asked the IRRB to help resolve a long-standing dispute concerning the impact of flood-protection dikes on cross-border flooding along the lower Pembina River. An IRRB study team prepared an analysis of the flooding problem and proposed a strategy for moving toward resolution of the dispute. The strategy outlines short-term information needs and the elements of a potential long-term solution to the cross-border disputes.

Water quality and ecosystem health

The IRRB's Aquatic Ecosystem Health Committee is developing a biological monitoring and assessment framework to monitor the Red River watershed's ecological health and establish a baseline for transboundary assessments. Over the past several years, the Board has broadened its focus from solely chemical water quality characteristics to include aquatic and biological conditions, drawing on agencies with expertise in these areas. The proposed projects include: establishing field procedures and protocols for biological sampling; assessment of existing water quality monitoring data sets for the tributaries and the mainstream of the Red River; and creating a framework for a watershed-wide aquatic ecosystem health assessment.

International water quality objectives for nutrients

In response to a request from Manitoba, the IRRB is investigating the feasibility of establishing water quality objectives for phosphorus and nitrogen for the Red River at the international boundary. The IRRB determined that a watershed-wide framework for quantification of nutrient loading rates from all sources is needed before specific objectives for nutrients at the international boundary could be established in a meaningful way.

The Board is working with the responsible jurisdictions to coordinate data collection activities and to develop science-based nutrient targets. In the interim, in 2004, the IRRB recognized that since the Red River flows into Lake Winnipeg, the lake's biological dynamics are impacted by nutrients carried into it

by the Red River. In cooperation with the three jurisdictions, the IRRB adopted an interim goal for nutrient loading reductions to Lake Winnipeg from the Red River watershed. The interim goal calls for participating jurisdictions and water management agencies to work toward reducing nutrient loading into Lake Winnipeg over the next five years by ten percent. The Board will track progress being made.

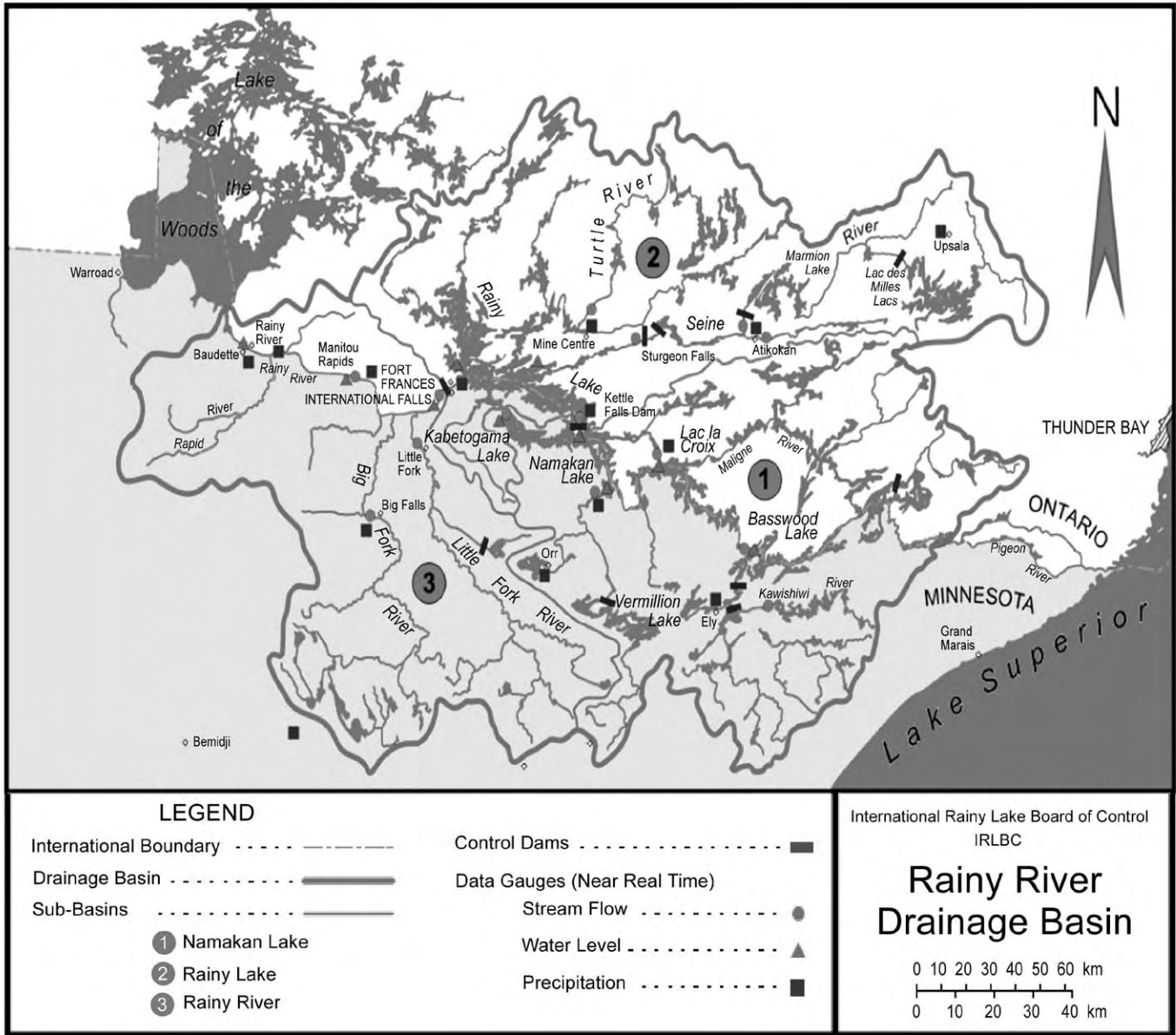
Comprehensive Flood Mitigation Plan

The Board is working with the RRBC and other agencies with an interest in the watershed to develop a Comprehensive Flood Mitigation Plan (CFMP) which will lead to improved transboundary coordination for flood mitigation and preparedness. The CFMP is being developed to complement the flood damage reduction section of the RRBC's Natural Resources Framework Plan. As the first component of this process, the IRRB completed a review of progress made on the recommendations contained in the IJC's November 2000 report, *Living With The Red*. The review found that while significant progress has been made, the recommendations requiring multiple-agency cooperation show little success. In particular, not much progress has been made on the development of a binational, comprehensive strategy for flood mitigation. The IRRB wants to work with governments and other interests in the watershed to put this flood mitigation plan in place.

The Rainy River watershed



The Rainy River watershed



Challenges and opportunities

The Rainy River watershed, including the Rainy and Namakan lakes, forms a mostly rural watershed along the Minnesota–Ontario border, running from the eastern extent of Voyageurs National Park on the U.S. side in the east to the twin cities of International Falls/Fort Frances in the west. Rainy Lake feeds the Rainy River flowing west into Lake of the Woods.

The system's control structures include dams at the outlet of Namakan Lake and a dam at the outlet of Rainy Lake at Fort Frances and International Falls, which is jointly owned by two paper and pulp processing plants, Boise White Paper LLC on the U.S. side, and Abitibi-Consolidated Inc. on the Canadian side. The dam is used primarily to generate power for the two processing plants.

The combined population of the watershed is approximately 35,000. The dominant water-use interests include recreation and tourism, fishing, Voyageurs National Park, resorts and cottages and pulp processing for the paper industry. There are also significant environmental concerns associated with these interests.

Many primary residences, second homes and cottages along the lakeshore are prone to flooding. In recent years, lake levels have fluctuated dramatically, with precipitation in 2001 and 2002 reaching the highest levels seen in the last 30 to 50 years. During flooding in June 2002, the town of Rainy River in Ontario, downstream of the lakes, experienced significant damage to roads, culverts and, in particular, sewer infrastructure. On Rainy Lake, the high levels damaged many fixed docks and shoreline facilities with disruptions to marinas and several resort and houseboat operations. Other problems around Rainy Lake included flooding of home basements, furnaces and water heaters, yards and landscaping, septic systems and sewers. Abitibi-Consolidated in Canada reported losses in hydroelectric generation and paper production, costs for flood fighting and cleanup, and extensive damage to its woodlands road network. Nearly every bridge and culvert in the storm area was washed out. On the U.S. side, Boise Cascade (now Boise White Paper LLC) incurred significant flood-fight and cleanup costs associated with the flooding of its International Falls powerhouse.

International Rainy Lake Board of Control (IRLBC) and International Rainy River Water Pollution Board (IRRWPB)

The International Rainy Lake Board of Control (IRLBC) monitors Namakan and Rainy Lake levels and outflows. This monitoring has two purposes:

- to assure compliance with the IJC's Order for the regulation of the level of Rainy and Namakan lakes; and
- to prevent or mitigate the occurrence of emergency conditions.

The International Rainy River Water Pollution Board (IRRWPB) monitors water quality in the Rainy River, including compliance with international water quality objectives.

The IRLBC and the IRRWPB hold regular information exchanges, convene joint public meetings and issue joint annual reports which highlight the activities of both Boards. Such collaboration created a strong working relationship between the two Boards, which proved helpful during the 2001 and 2002 floods and the drought of 2003.

Prior to these recent flood and drought events, various individuals and interests in the watershed, local and state resource agencies and governments raised concerns about the impact of the system's water regulation plan on navigation, aquatic vegetation, fish and wildlife, tourism and shoreline property. In response to these concerns, the IRLBC reviewed the IJC's Order for the regulation of the level of Rainy Lake and other boundary waters in the Rainy Lake watershed. The Board then recommended certain changes to the IJC Order for Rainy and Namakan lakes. The IJC incorporated these changes into the revised IJC Order in 2000.

The highly fluctuating water levels, with the high-water events of 2001 and 2002 and the low-water event in 2003, which occurred shortly following the implementation of the new rule curve stimulated substantial public debate about the watershed's new regulation plan and the system's management. The underlying issues included flooding in various parts of the system; the growing recreation sector; and a greater awareness of environmental and ecological matters.

These issues and continued economic dependence on the pulp and paper plants aroused citizen interest in the watershed. Stakeholders requested clarification of the new regulation processes and trade-offs, more information during significant events, and more public input into the regulation of Rainy and Namakan lakes. Since most of these issues were transboundary matters, many citizens were directing their specific and local concerns to the IJC or to the two federal governments.

In response to growing requests for local involvement in decisions about levels and flows throughout the system, the IJC in 2003 added two local public members to the IRLBC, thus giving a direct voice to local communities on both sides of the border.

Programs to build watershed capabilities

In late 2004, the two boards proposed to the IJC that they improve their effectiveness in fulfilling their respective mandates by building up their watershed capabilities. These proposals include

- strengthening public education on the risks associated with flooding, and
- improving understanding of the system, notably by developing a hydrological/hydraulic model of the system and conducting a flood-risk analysis of Crane Lake to look at unintended impacts to Crane Lake from the regulation of Namanan Lake under the revised IJC Order.

- **Outreach**

Broader engagement with other watershed partners

To improve communications with the public and to increase public involvement regarding water level and flow regulation, the Boards propose strengthening outreach in the watershed. They plan to engage the First Nations/Native Americans, state/provincial agencies, non-governmental conservation groups, and other individual stakeholders in educational and collaborative projects related to watershed issues.

Multi-media educational campaign

In light of the 2001 and 2002 events, the Boards recognize the importance of raising public awareness about the extent to which water levels can rise. The public needs to learn about the shoreline hazard-land area and how it should be used, and local governments need to be encouraged to adopt and enforce hazard-land zones around the lakes with appropriate development restrictions in flood-prone areas. The Boards have set a high priority on a media educational campaign to advance appropriate planning and the implementation of measures to minimize damage.

- **Better understanding of the system**

Hydrologic/hydraulic model

The Control Board (IRLBC) needs a hydrologic/hydraulic model for the Rainy River so that it can better understand and predict the impact of its decisions and operating practices in the watershed. This model would help assess the impacts of the new rule curve on the downstream areas along Rainy River; assess the influence of peaking; determine flood levels on the river; and assess other existing or future issues related to Rainy River levels, flows, and water quality, fish and wildlife, and other environmental matters.

⁵ Rule curves specify target upper and lower water levels over time. Hence rule curve regulation plans are based on a curve, as opposed to the upper and lower limits remaining fixed at constant levels.

High-water risk analysis on Crane Lake

The 2001 flooding on the Rainy and Namakan lakes highlighted the need for a flood-risk analysis under the new rule curve⁵ for Crane Lake. This analysis is contingent on completion of the hydrologic/hydrographic model. Completion of these complementary tools would facilitate data sharing; a better common understanding of physical interactions in the watershed; analytical discussions by key entities with interests and responsibilities in the watershed; and better overall management of watershed water resources.

5 Observations and next steps

Since 1997 the IJC has moved from the initial International Watershed Board concept described in *The IJC and the 21st Century* to a close examination of the concept's potential application in three transboundary watersheds: the St. Croix River, the Red River, and the Rainy River. The IJC's discussions with various interests in these three watersheds confirm both the 1997 projections of 21st century challenges and the increased capability of IJC boards to help the governments address these challenges through employing an international watershed approach.

In the course of developing the International Watersheds Initiative concept, the IJC has become aware of a number U.S.–Canadian transboundary watersheds (such as the Flathead, Lake Champlain, Lake of the Woods and St. Mary–Milk Rivers) where boards with strong, local watershed capabilities could help address emerging watershed challenges and opportunities. The IJC will continue to monitor developments in such areas and provide advice and assistance as resources and mandate permit. However, the IJC's first priority at this time under the initiative is to strengthen the watershed capabilities of the IJC boards in the three watersheds reviewed in this report. Once this initiative becomes better established in one or more of these watersheds, and the structure and benefits of the initiative become clear, the IJC will look more closely at additional watershed initiative candidates and discuss these with the two federal governments.

The IJC recognizes the need to approach its International Watersheds Initiative in a framework of partnerships. This partnership approach has led to a much clearer understanding of the issues and opportunities in these three watersheds.

The distinctive role of the IJC and its boards arises from the transboundary aspects of the watersheds. From the standpoint of local watershed stakeholders, the IJC plays an important "honest broker" role with the ability to attract the attention and potentially the resources of the two federal governments. From the standpoint of the two federal governments, the IJC and its boards can resolve known and avert potential transboundary problems so that they do not require the intervention of the federal governments.

Building up the international watershed capabilities of the IJC's boards should significantly help address problems in the proper venues and at the appropriate level. Each IJC board in the three watersheds discussed in this report has developed proposals tailored to its particular watershed. The unique features and issues in each watershed preclude a standardized approach. Implementation of these proposals will assist these boards to execute their mandates more effectively through outreach, education, and partnership building, and developing a better understanding of the river systems and their contributing watersheds.

The specific projects proposed for the St. Croix River, Red River, and Rainy River watersheds will broaden the scope of the IJC's involvement in these transboundary watersheds, beyond its traditional role of monitoring water quality, water levels and river flows. Still advisory in nature, this broadened role for the IJC boards will equip them to be more helpful to the federal, state and provincial governments and to other entities with responsibilities and interests in the watersheds.

Moving forward on the watershed initiatives proposed in this report requires funding from the two federal governments. Implementation of all projects noted in this report will cost U.S. \$600,000 per year over a three-year period, with variations among the three boards. Of the three-year total of \$1.8 million, \$360,000 will be for core operational funding (\$120,000 per year) and \$1.44 million for specific project, one-time funding. Details of the costs for each board and for each of the projects identified in section 4 of this report are available upon request.

The IJC's U.S. Section plans to spend several hundred thousand dollars from its Fiscal Year 2005 operating budget to support a number of the watershed initiative projects described in this report. Aside from contributing funding support for secretariat services for the International Red River Board, the IJC's Canadian Section does not have discretionary funding to match these allocations. The Commission notes that Canadian matching funds must be made available to maintain the Commission's principle of equal U.S. Section – Canadian Section cost-sharing.

Commission funding for both the U.S. and Canadian Sections towards watershed initiative activities needs to be supplemented by a reliable, longer-term funding stream, perhaps for an initial three-year period, to enable the full implementation of these projects. The Commission looks forward to discussing these needs with federal government officials from both countries in the immediate future.

The IJC requests meetings with the two federal governments to discuss this report, its proposals, and the following two recommendations:

1. The Governments of Canada and the U.S. confirm their support for the IJC's International Watersheds Initiative pilot projects in the St. Croix River, Red River and Rainy River watersheds as a means to strengthening binational capability to address Canada–U.S. transboundary water-related challenges at the local level.
2. The Governments support the IJC's International Watersheds Initiative by providing funds to undertake the proposed projects.

Signed this 8th day of June, 2005



Herb Gray
Chair, Canadian Section



Dennis L. Schornack
Chair, U.S. Section



Robert Gourd, Commissioner



Irene B. Brooks, Commissioner



Jack P. Blaney, Commissioner



Allen I. Olson, Commissioner

